

REMARKS

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

Claim Amendments

Claim 1 has been amended to clarify that the rolling is a continuous multipass rolling, to recite that at least one pass interval is longer than 20 seconds, and to clarify that the pass interval longer than 20 seconds can resolve the problem of the accumulated processing heat generation. Support for these amendments is found page 1, line 14 to page 2, line 12, and the Embodiments set forth on pages 13-21 of Applicants' specification. [For example, Embodiment 3 of Applicants' specification specifically recites a pass interval of 20 seconds, and also clearly demonstrates at least one pass interval which is greater than 20 seconds.]

Accordingly, no new matter has been added to the application by the above-discussed amendments.

Consideration After Final Rejection

Although this Amendment is presented after final rejection, the Examiner is respectfully requested to enter the amendments and consider the remarks, as they place the application in condition for allowance.

Patentability Arguments

The patentability of the present invention over the disclosures of the references relied upon by the Examiner in rejecting the claims will be apparent upon consideration of the following remarks.

Rejections Under 35 U.S.C. § 103(a)

The rejection of claims 1-10 and 13-20 under 35 U.S.C. § 103(a) as being unpatentable over Fujioka (JP09-279233 machine translation); as well as the rejection of claim 11 under 35 U.S.C. § 103(a) as being unpatentable over Fujioka combined with Sakata (JP 2001-214214

English abstract); and the rejection of claim 12 under 35 U.S.C. § 103(a) as being unpatentable over Fujioka combined with Saito (JP 60-200915 English abstract) are respectfully traversed for the following reasons.

As discussed above, Applicants' amended claims require that at least one pass interval is longer than 20 seconds. As also discussed above, this pass interval longer than 20 seconds resolves the problem of accumulated processing heat generation.

On the contrary, as noted by the Examiner (please see the last paragraph on page 4 of the Office Action), the pass interval in Fujioka is strictly limited to within 20 seconds. In fact, Fujioka explicitly states that it is necessary to limit the pass interval to within 20 seconds, because the cumulative strain is not obtained by the progress of the recovery of ferrite. (Please see paragraph [0029] of the Fujioka reference.) The disclosure of Fujioka clearly contradicts the method recited in Applicants' claims, wherein at least one pass interval is longer than 20 seconds. (Again, please see the Embodiments set forth on pages 14-21 of Applicants' specification, wherein about half of the pass intervals exceed 20 seconds.)

Additionally, in the actual rolling, there is frequently a case for the temperature of the material to exceed 100°C, because the deformation distance of steel and the processing heat generation are large. Further, it is known that heat generation is larger in wire or rod rolling than in plate rolling, due to friction heating, etc.

The examples in Fujioka are all plate rollings. On the contrary, the Embodiments of the present application are rod rolling, wherein processing heat generation is easily accumulated. Therefore, the rolling which can be applied in Fujioka is greatly limited, while Applicants' method can apply to various rollings.

In view of the above, Applicants kindly assert that Fujioka fails to teach or suggest the method recited in Applicants' independent claim 1, and dependent claims 2-10 and 13-20.

Additionally, since claims 11 and 12 are directly dependent upon claim 1, the subject matter of these claims is patentable over Fujioka for the same reasons that the subject matter of claim 1 is patentable over this reference.

The Examiner has relied on Sakata as disclosing an apparatus for the thermo mechanical treatment of steel, wherein the apparatus includes a multidirectional roll stand for the rolling step.

The Examiner has relied on Saito as disclosing a process comprising the rolling of steel wherein the rolling speed and draft are controlled to improve the steel structure.

It is clear that neither of these references remedies the deficiencies of Fujioka, as discussed in detail above. Accordingly, claims 11 and 12 are patentable over the cited combinations of references.

For these reasons, the invention of Applicants' pending claims is clearly patentable over the cited references.

Double Patenting Rejection

Regarding the provisional rejection of claims 1-20 on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 1-20 of co-pending Application No. 10/557,416, Applicants intend to file a Terminal Disclaimer, if necessary. Accordingly, Applicants respectfully request that the Examiner hold this rejection in abeyance, pending an indication that the claims of the present application are otherwise in condition for allowance.

Conclusion

Therefore, in view of the foregoing amendments and remarks, it is submitted that each of the grounds of objection and rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

Shiro TORIZUKA et al.

/Amy E. Schmid/

By: 2009.05.26 17:00:46 -04'00'

Amy E. Schmid
Registration No. 55,965
Attorney for Applicants

AES/emj
Washington, D.C. 20005-1053
Telephone (202) 721-8200
Facsimile (202) 721-8250
May 26, 2009